

REMARKS

I. INTRODUCTION

Applicants have amended claims 1, 6, and 11. Claims 1-12 are presently pending in this application, although claim 12 has been previously withdrawn from consideration. Reexamination and reconsideration is hereby respectfully requested.

II. OBJECTION TO CLAIM 9

The Office objected to claim 9, but indicated that it would be allowable if rewritten to overcome the rejection under 35 U.S.C. § 112, second paragraph set forth in the Office Action and to include all of the limitations of the base claim and any intervening claims. Applicants respectfully submit that in the previous response, they overcame any 35 U.S.C. § 112 rejection by providing proper antecedent basis for “said groove.” The Office indicates in paragraph 1 of the Office Action that the 112 second paragraph rejection is withdrawn in light of the amendment received October 17, 2003. Furthermore, applicants amended claim 9 as an independent claim, including all limitations of the base claim and any intervening claims. Applicants greatly appreciate the indication of allowable subject matter and the statement that none of the prior art of record appears to teach, suggest, or render obvious the configuration of claim 9. For all these reasons, Applicants believe that claim 9 is in allowable form.

Reconsideration and withdrawal of the objection is hereby respectfully requested.

III. CLAIM REJECTIONS UNDER 35 U.S.C. § 102

Claims 1-5 stand rejected under 35 U.S.C. § 102(b) as anticipated by Wolf et al. (U.S. 4,317,871). Applicants respectfully overcome this rejection.

Claim 1 recites, “A battery terminal configured to be secured to a battery case comprising: a terminal assembly . . . ; a ring configured to be disposed over said terminal assembly; and an anti-rotation system including a first set of angularly-spaced bosses with intervening slots formed on an outer surface of the case, a second set of angularly-spaced bosses with intervening slots on a first axial side of said ring facing said case and which are complementary with said first set of bosses and slots, and a set of recesses on a second axial side of said ring opposite said first side configured to receive portions of said terminal assembly.” (emphasis added).

Wolf et al. at most disclose a ring configured to be disposed over said terminal assembly and an anti-rotation system including a first set of angularly spaced bosses with intervening slots formed on an outer surface of a battery case, not an anti-rotation system further including “a second set of angularly-spaced bosses with intervening slots on a first axial side of said ring facing said case . . . and a set of recesses on a second axial side of said ring opposite said first axial side” as positively claimed in amended claim 1. The anti-rotation system disclosed in Wolf et al. includes a first set of angularly spaced bosses with intervening slots on an outer surface of a battery case. However, in Wolf et al., the second set of angularly spaced bosses with intervening slots that are complementary to the first set of bosses and slots is “formed about the periphery of the head portion 18 of the insert to fit within the notches 24 [and ribs 23]” (Wolf et al., Col. 2, ll. 25-28), not “on a first axial side of said ring facing said case” as positively claimed in amended claim 1.

Furthermore, Wolf et al. does not disclose “a set of recesses on a second axial side of said ring opposite said first axial side” as positively claimed in amended claim 1. The Office states that Wolf et al. disclose “a set of recesses 14 on a second side of said ring opposite said first side configured to receive portions of said terminal assembly (Figs. 1-3 as applied to claim 1).” Office Action, page 3. However, reference element 14 of Wolf et al. refers to the internal threads of the terminal insert 13 of the terminal assembly 12. Wolf et al., Col. 2, ll. 12-14. Wolf et al. does not disclose a set of recesses on a second axial side of a ring disposed over the terminal assembly. At most, Wolf et al. disclose that the ring configured to be disposed over the terminal assembly may have “a volume of empty space within the ring 29 so that, during the resistance welding operation, the molten lead from the outwardly extending portion of the conical surface 31 is advantageously retained by the ring 29 as it cools” (Wolf et al., Col. 3, ll. 15-19) or “a lead-receiving groove on its [the ring’s] interior face 35” (Wolf et al., Col. 3, ll. 23-24), not “a set of recesses” as positively claimed in amended claim 1. Furthermore, the groove in Wolf et al. is located on a radial side (35) of the ring, not an axial side as positively claimed in amended claim 1.

Applicants note that element 72 of the present invention is not a ring, nor a component of the invention. It merely aids in the construction of the claimed invention, in a manner similar to

element 64, a tool used in the orbital forming process. Element 72 is a support member that retains the terminal assembly 18 in position for further processing.

Claims 2-5 depend from claim 1, directly or indirectly, and therefore contain all the limitations thereof. For these reasons, claims 1-5 define patentable subject matter over Wolf et al. Reconsideration and withdrawal of the rejections are hereby respectfully requested.

Further, with respect to claim 5, Applicants note that the annular wall of the terminal insert is not orbitally spin riveted in Wolf et al. Rather, the inwardly facing surface 31 of the terminal insert is resistance welded to the side terminal strap 16, using a pair of resistance welding electrode pads 32, 33. The annular wall of the terminal insert does not contact the electrode pads 32, 33 during the resistance welding operation, and the annular wall of the terminal insert is not orbitally spin riveted as positively claimed in claim 5.

IV. CLAIM REJECTIONS UNDER 35 U.S.C. § 103

Claims 6-7 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Wolf et al. in view of Hooke et al. (U.S. 5,663,015). Claims 6-7 depend from claim 1, directly or indirectly, and therefore contain all the limitations thereof. Accordingly, for at least the same reasons given above in connection with claim 1, Applicants respectfully request reconsideration and withdrawal of the rejection.

As an additional basis for patentability, Applicants respectfully submit that the combined prior art references do not teach or suggest all of the claim limitations.

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all of the claim limitations.

MPEP § 2143.

Claim 6 recites: “The battery terminal of claim 1 further including a sealing system, said sealing system comprising: an annular groove circumferentially-extending in said flange on a side configured to engage said inner surface of said case; an elastomeric seal configured to be disposed in said groove to form a seal between said inner surface of said case and said terminal

assembly; and a sealant material disposed between said first axial side of said ring and said case.” (emphasis added). Wolf et al. at most disclose “the ribs 23 [molded integrally with the battery side wall 11] define a recess in which a thin annular gasket 28 is fitted against an annular sealing lip 25 so that the gasket is sandwiched tightly against the lip 25 by the insert head portion 18 to provide a fluid tight seal around the opening 21.” Wolf et al., Col. 2, ll. 38-43. Therefore, Wolf et al. at most disclose a recess in the ribs of the side wall of the battery case, not “in said flange” or head portion of the threaded insert as positively claimed in claim 6.

Furthermore, the recess of Wolf et al. is not configured to “engage said inner surface of said case” as positively claimed, but rather is located on the outer surface of the battery case and is configured to engage the threaded terminal insert. Therefore, the prior art references do not teach or suggest all of the claim limitations.

Additionally, Wolf et al. does not disclose a further recitation of claim 6, “a sealant material disposed between said first axial side of said ring and said case.” In Wolf et al., ring 29 “is forced onto the body portion 19 of the insert extending inwardly through the opening 21 [in the battery case]. The ring 29 has an inside diameter slightly less than the outside diameter of the body portion 19.” Wolf et al., Col. 2, ll. 49-53. The ring is force-fit onto the terminal in Wolf et al. There is no sealant material “disposed between said first axial side of said ring and said case” as positively claimed in claim 6. Again, the prior art references do not teach or suggest all of the claim limitations of claim 6. Hooke et al. merely teach the use of an elastomeric gasket, and even in combination with Wolf et al, fail to teach or suggest all of the claim limitations.

Claim 7 depends from claim 6 directly, and therefore contains all the limitations thereof. For these reasons, claims 6-7 define patentable subject matter over Wolf et al. in view of Hooke et al. Reconsideration and withdrawal of the rejections are hereby respectfully requested.

V. CLAIM REJECTION UNDER 35 U.S.C. § 103

Claim 8 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Wolf et al. in view of Bäcker et al. (U.S. 4,076,908). Claim 8 depends from claim 1 indirectly and from claim 6 directly and therefore contains all the limitations thereof. Accordingly, for at least the same reasons given above in connection with claims 1 and 6, Applicants respectfully request reconsideration and withdrawal of the rejection.

As an additional basis for patentability, there is no motivation to combine the prior art references Wolf et al. and Bäcker et al., and even if there were, the prior art references do not teach or suggest all of the limitations of claim 8. Claim 8 recites “communication means for allowing a fluid to communicate between an interior of said case and said groove.” (emphasis added). In claim 8, the groove in the flange of the terminal engages the inner surface of the battery case, creating the potential for contact between the electrolyte solution and the flange.

The Office stated that the Applicant improperly argued a limitation not explicitly recited in the claims, that is, that the ring is disposed on the inside of the case. The ring may not be disposed in the inside of the case in the instant application. Rather, the groove in the flange is “configured to engage inner surface of said case” and the elastomeric seal is “configured to be disposed in said groove to form a seal between inner surface of said case and said terminal assembly” as recited in claim 6. (emphasis added). Therefore, it is the groove and elastomeric seal that engage the inner surface of the case, not the ring.

Even if Bäcker et al did teach that it is desirable to have the terminal and sealing area disposed in acid, there would be no motivation to combine Wolf et al. with Bäcker et al since the terminal head of Wolf et al. is outside the electrolyte solution and therefore, not susceptible to terminal corrosion. However, even were it proper to combine the references, Bäcker et al. does not teach that it is desirable to have the terminal and sealing area disposed in the acid to prevent terminal corrosion. Rather, Bäcker et al. at most disclose “sealant-coated shrink tubing [to] seal[] off microscopic channels, pores, etc. which are unavoidably present on the surface of the lead” in order to protect the terminal from the corrosive oxygen-acid mixture. Bäcker et al. disclose nothing regarding positively providing a “communication means.”

VI. CLAIM REJECTION UNDER 35 U.S.C. § 103

Claim 10 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Wolf et al. in view of Oxenreider (U.S. 4,351,890). Claim 10 depends from claim 1 directly and therefore contains all the limitations thereof. Accordingly, for at least the same reasons given above in connection with claim 1, Applicants respectfully request reconsideration and withdrawal of the rejection.

VII. CLAIM REJECTION UNDER 35 U.S.C. § 103

Claim 11 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Wolf et al. in view of Hooke et al. and Bäcker et al. Claim 11 recites all that is recited in claim 1 and therefore contains all the limitations thereof. Accordingly, for at least the same reasons given above in connection with claim 1, reconsideration and withdrawal are requested.

VIII. ALLOWABLE SUBJECT MATTER

Applicants appreciate the indication of allowable subject matter and the statement that none of the prior art of record appears to teach, suggest, or render obvious the configuration of claim 9. As noted above, claim 9 has been previously amended to correct any 35 U.S.C. § 112 rejection and to include all of the limitations of the base claim and any intervening claims. Therefore, it is respectfully submitted that claim 9 is in allowable form, and reconsideration and withdrawal of any objection to claim 9 is hereby respectfully requested.

IX. CONCLUSION

For at least the above-cited reasons, all claims pending in the present application are now believed to be allowable. Early receipt of a Notice of Allowance is hereby respectfully requested.

Respectfully submitted,

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